

Ser. No. 10/713,641

Amendments to the Claims

1. (Currently amended) A gas turbine engine comprising:
 - a fan;
 - a compressor along a core flow path and having:
 - a plurality of rows of blades;
 - a plurality of rows of vanes; and
 - a plurality of shroud rings, at least a bleed one of which defines a plurality of bleed ports to a bleed plenum;
 - a structural hub downstream of the shroud rings and secured relative to the shroud rings;
 - a structural case extending from an aft joint with securing the structural case to the structural hub to a fore joint with securing the structural case to a joined one of the shroud rings and having a plurality of valve ports from the bleed plenum, at least a portion of the structural case extending structurally between the fore and aft joints;
 - a valve element shiftable between:
 - a first condition in which the valve element blocks communication through the valve ports; and
 - a second condition in which the valve element does not block said communication.
2. (Original) The engine of claim 1 wherein:
 - the joined one of the shroud rings is not the bleed one of the shroud rings.
3. (Original) The engine of claim 1 wherein the at least a bleed one of the shroud rings comprises:
 - a shroud ring of an exit guide vane assembly having a plurality of duct portions associated with aft portions of said plurality of bleed ports; and
 - a bleed duct having a plurality of duct portions associated with fore portions of said plurality of bleed ports.

Ser. No. 10/713,641

4. (Original) The engine of claim 1 wherein:
the joined one of the shroud rings is immediately upstream of the bleed one of the shroud rings.
5. (Original) The engine of claim 1 wherein:
the valve element is so shiftable via a combined circumferential rotation and longitudinal translation.
6. (Original) The engine of claim 1 wherein:
the valve element carries an outboard aft seal and an inboard fore seal for sealing with the structural case in the first condition.
7. (Original) The engine of claim 1 wherein:
a bleed flowpath through the bleed ports and the valve ports further extends through the structural hub to join a fan bypass flow.
8. (Previously presented) The engine of claim 7 wherein:
the structural hub contains at least one fan exit guide vane; and
the bleed flowpath joins the fan bypass flow downstream of said fan exit guide vane.
9. (Currently amended) A gas turbine engine comprising:
a fan;
a compressor along a core flow path and having:
a plurality of rows of blades;
a plurality of rows of vanes; and
a plurality of shroud rings, at least a bleed one of which has a plurality of bleed ports to a bleed plenum;
a structural hub downstream of the shroud rings and secured relative to the shroud rings;
a structural case extending from an aft joint ~~with~~ securing the structural case to the
structural hub to a fore joint ~~with~~ securing the structural case to a joined one of the shroud rings

Ser. No. 10/713,641

and having a plurality of valve ports from the bleed plenum, at least a portion of the structural case extending as a continuous piece between the fore and aft joints;

a valve element shiftable between:

a first condition in which the valve element blocks communication through the valve ports; and

a second condition in which the valve element does not block said communication.

10. (Original) The engine of claim 9 wherein:
the joined one of the shroud rings is immediately upstream of the bleed one of the shroud rings.
11. (Original) The engine of claim 9 wherein:
the structural hub carries a plurality of fan exit guide vanes.
12. (Original) A method for assembling a gas turbine engine, the engine comprising:
a fan;
a compressor along a core flow path and having:
a plurality of rows of blades;
a plurality of rows of vanes; and
a plurality of shroud rings, at least a bleed one of which has a plurality of bleed ports;
a structural hub downstream of the shroud rings and secured relative to the shroud rings;
a structural case extending from an aft joint with the structural hub to a fore joint with a joined one of the shroud rings and having a plurality of valve ports;
a valve element shiftable between:
a first condition in which the valve element blocks communication through the valve ports; and
a second condition in which the valve element does not block said communication,

Ser. No. 10/713,641

the method comprising:

assembling an exit guide vane assembly including an aftmost of said plurality of shroud rings to said structural hub;

assembling the structural case to the structural hub;

assembling an assembly of said shroud rings to the structural case with at least one of the shroud rings being at least partially inserted within the structural case.

13. (Original) The method of claim 12 wherein:

at least one fan exit guide vane is preassembled with the structural hub.

14. (Original) The method of claim 12 wherein:

the aftmost of said plurality of shroud rings has a plurality of duct portions associated with aft portions of said plurality of bleed ports; and

the at least one of the shroud rings includes a penultimate shroud ring having a plurality of duct portions associated with fore portions of said plurality of bleed ports.

15. (Previously presented) The method of claim 12 further comprising:

assembling the valve element to the structural case after assembling the structural case to the structural hub.

16. (Currently amended) The engine of claim 1 wherein:

the fore joint is a bolted joint securing the structural case to the joined one of the shroud rings; and

the aft joint is a bolted joint securing the structural case to the structural hub.

17. (Previously presented) The engine of claim 1 wherein:

the bleed plenum is an annular plenum.

18. (Currently amended) The engine of claim 9 wherein:

the fore joint is a bolted joint securing the structural case to the joined one of the shroud

Ser. No. 10/713,641

rings; and

the aft joint is a bolted joint securing the structural case to the structural hub.

19. (Previously presented) The engine of claim 9 wherein:
the bleed plenum is an annular plenum.
20. (Previously presented) A gas turbine engine comprising:
a fan;
a compressor along a core flow path and having:
a plurality of rows of blades;
a plurality of rows of vanes; and
a plurality of shroud rings, at least a bleed one of which defines a plurality of bleed ports;
a structural hub downstream of the shroud rings and secured relative to the shroud rings;
a structural case extending from an aft joint with the structural hub to a fore joint with a joined one of the shroud rings and having a plurality of valve ports, at least a portion of the structural case extending structurally between the fore and aft joints, the joined one of the shroud rings not being the bleed one of the shroud rings;
a valve element shiftable between:
a first condition in which the valve element blocks communication through the valve ports; and
a second condition in which the valve element does not block said communication.
21. (Previously presented) The engine of claim 20 wherein:
the fore joint is a bolted joint and the aft joint is a bolted joint.
22. (Previously presented) A gas turbine engine comprising:
a fan;
a compressor along a core flow path and having:

Ser. No. 10/713,641

a plurality of rows of blades;
a plurality of rows of vanes; and
a plurality of shroud rings, at least a bleed one of which has a plurality of bleed ports;
a structural hub downstream of the shroud rings and secured relative to the shroud rings;
a structural case extending from an aft joint with the structural hub to a fore joint with a joined one of the shroud rings and having a plurality of valve ports, at least a portion of the structural case extending as a continuous piece between the fore and aft joints, the joined one of the shroud rings is immediately upstream of the bleed one of the shroud rings;
a valve element shiftable between:
- a first condition in which the valve element blocks communication through the valve ports; and
a second condition in which the valve element does not block said communication.